

A NEW GENUS OF NEOTROPICAL AGALLIINAE
(HOMOPTERA: CICADELLIDAE)

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Abstract.—The Neotropical leafhopper genus *Omanagallia*, new genus, with included species *O. obscura*, new species from Brazil, and *O. elongata*, new species from Argentina, is described, illustrated, and placed in the leafhopper subfamily Agalliinae. The new genus shares features of the head and wing with species of Eupelicinae, Evansiolinae, and Megophthalminae, but these resemblances apparently resulted from convergence.

Key Words: Leafhopper, morphology, phylogeny, systematics, classification

Species of the leafhopper subfamily Agalliinae occur throughout the temperate and tropical regions of the world, but are most diverse in the New World tropics. Oman (1938) provided the first comprehensive review of the South American species incorporating genital morphology, and Kramer (1964) reviewed the generic classification. Davis (1975) reviewed the higher classification of the Agalliinae and declined to delimit tribes within the subfamily because of intergradations among genera for the characters studied. Hamilton (1983) synonymized Agalliinae and Megophthalminae (as Megophthalmini) without explicit justification and is not followed here.

The new taxa described herein key to Agalliinae in Evans' (1947) key and have most diagnostic features listed by Kramer (1964) and Davis (1975) for that subfamily. In Kramer's (1964) key, the new taxa would perhaps be identified as *Stenagallia* Evans or *Agalliopsis* Kirkaldy, but differ drastically from these and all other described agalline genera. Features of the head, pronotum, and forewings also suggest affinities to the Megophthalminae, Evansiolinae, and Eupelicinae. Although the new taxa are

based on a small number of specimens—one species is based on three females, the other on one male—their unique combination of morphological features warrants formal description. All specimens studied are in the Insect Collection of the United States National Museum, Washington.

Members of the new genus may be separated from other New World Agalliinae by the following key. Terminology for naming wing veins follows Evans (1946).

1. Forewing without opaque sclerotization, texture coarsely granulose, veins carinate, M_{1+2} absent (Fig. 13); hind tibia row IV without capitate setae *Omanagallia*, NEW GENUS
- 1'. Forewing with opaque sclerotization, texture glabrous or shagreen, veins not carinate, at most weakly raised, M_{1+2} present; hind tibia row IV usually with capitate setae
other New World Agalliinae
(see Kramer 1964).

Omanagallia, NEW GENUS
(Figs. 1-15)

Type species: *Omanagallia elongata*, new species, here designated.

Description.—Color. Dull orange to yellow or tan, without distinct maculae; fore-

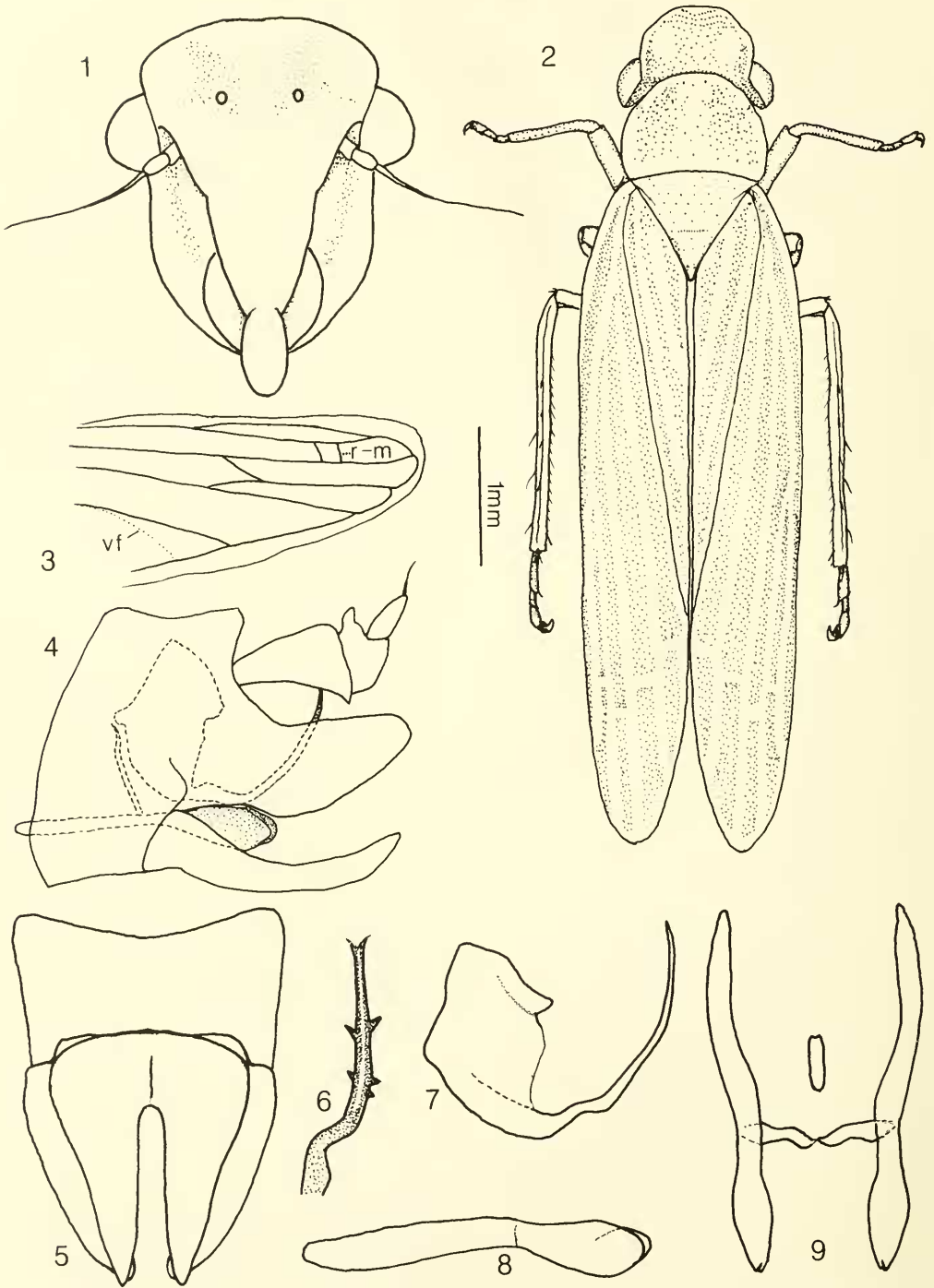
wing membrane without distinct pigmentation. Head (Figs. 1, 2, 10–12). Beak attaining anterior margins of hind coxae; clypellus flat, elliptical, anterior margin exceeding ventral margins of genae, fused medially to frontoclypeus; frontoclypeus weakly convex or flat, muscle scars weak; postfrontal sutures absent; genae broad, arcuate laterally, concealing proepimera, bluntly carinate between lora and antennal pit, distance from lora to antennal pit subequal to length of lora; antennal ledge well developed, in anterior view partially concealing antennal base, in lateral view arcuate; antennal flagellum shorter than interocular distance; ocelli on face slightly nearer to eyes than to each other, distant from dorsal margin of head; crown weakly to strongly produced anterad or dorsad, slightly elevated anteromesad of eyes. Thorax. Pronotum (Figs. 2, 11, 12) depressed anteriorly and sublaterally, transversely rugose, posterior margin transverse or weakly emarginate; lateral margin bluntly carinate, not produced, length more than half maximum length of eye. Scutellum small, weakly convex. Forewing (Figs. 2, 13) with costal margin expanded basally, veins prominent, cells without opaque sclerotization, veins R_1 and M_{1+2} and crossveins $m-cu_1$ and $m-cu_2$ absent. Hind wing (Fig. 3) with R_{1+2} weak, one or two preapical $r-m$ crossveins present, vannal fold diverging from Cu_2 distally. Legs. Prothoracic femur without rows of setae, tibia with dorsal surface semicylindrical or weakly flattened and without macrosetae, ventral surface with a few small preapical macrosetae in row III. Mesothoracic femur without preapical macrosetae, tibia semicylindrical with preapical setae in rows III and IV. Metathoracic femur (Fig. 14) with setal formula 2:1 or 2:0; tibia not flattened, macrosetae small, sparse, rows without distinct intercalary setae, row III macrosetae restricted to apical half of leg, row IV setae small and tapered, one preapical seta distinctly larger than others; tarsomere I subequal in length to combined length of tar-

someres II and III, plantar setae scattered or forming two poorly delimited bands, dorsoapical pair of setae small. Abdomen. Terga without median or submedian tuberosities. Male genitalia. (Based on *O. elongata*, n. sp.) Valve (sternum VIII, Fig. 5) subquadrate, fused to pygofer; pygofer, in lateral view (Fig. 4), subquadrate with apical lobe partially separated by ventrolateral membranous cleft, sparsely setose dorsoapically, macrosetae and dorsal hooks absent; subgenital plate lobes (Fig. 5) fused basally, evenly tapered toward apex, without macrosetae; style (Figs. 8, 9) linear, apodeme elongate; connective (Fig. 9) T-shaped, incompletely sclerotized; aedeagus (Figs. 6, 7) with shaft elongate, slender, and U-shaped. Female genitalia. (Based on *O. obscura*, n. sp.) First valvula with dorsoapical sculpturing reticulate (as in fig. 7A of Davis 1975); second valvula (Fig. 15) with weak sclerotization mesad of rami, dorsum with membranous notch at midpoint, dorsal margin with apical half finely serrate, ventral margin serrate preapically, margins evenly tapered from midlength to apex. Integumental fine structure. Head, pronotum, and scutellum finely shagreen; forewing membrane and veins coarsely granulose, granules arranged in diagonal rows (as in Eupelicinae).

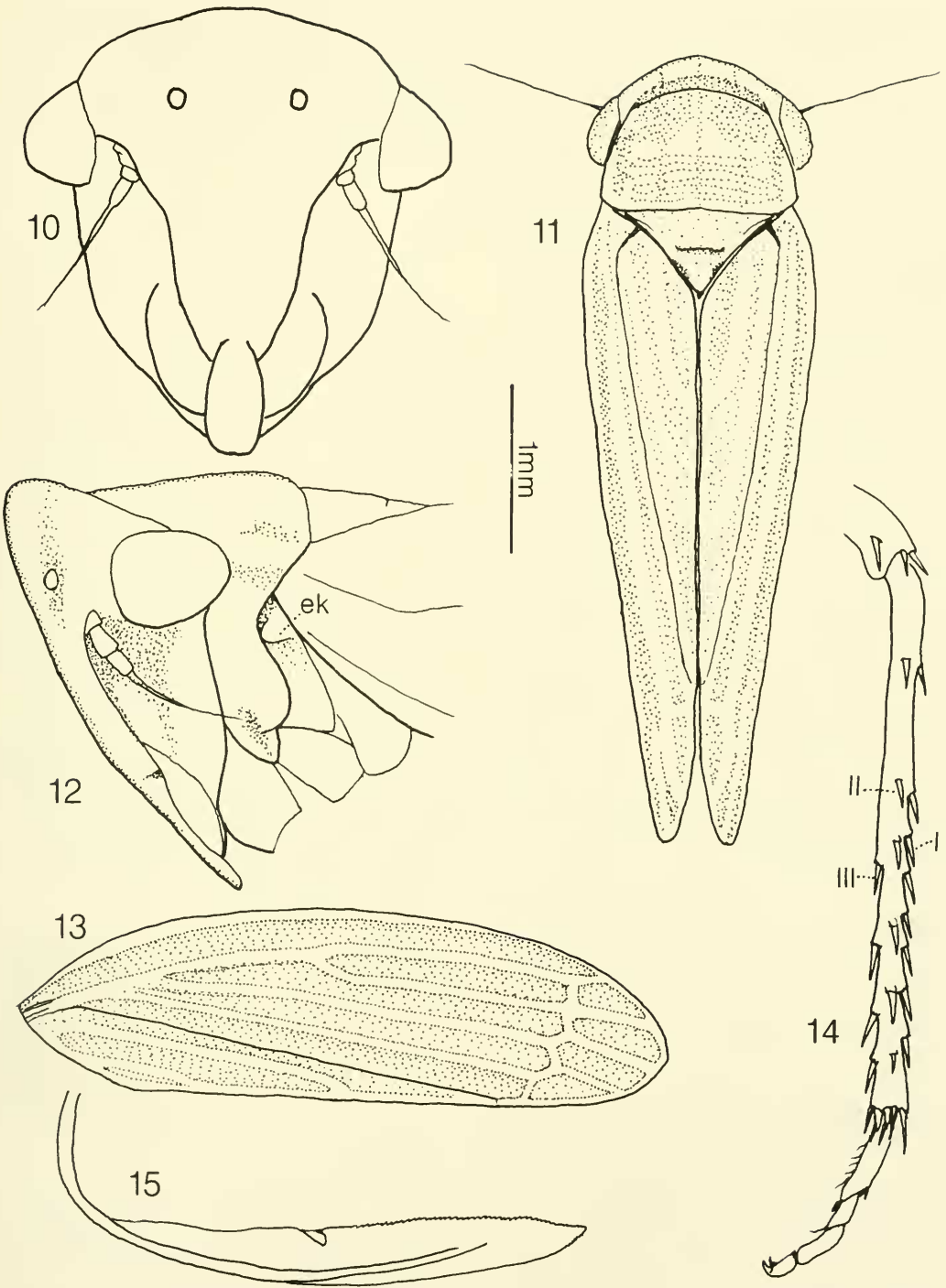
Etymology.—The generic name is selected to honor Prof. Paul W. Oman for his lasting contributions to knowledge of the Agalliinae.

KEY TO SPECIES OF *OMANAGALLIA* DIETRICH

1. Head strongly produced anterad, crown flat; length of lateral margin of pronotum greater than maximum length of eye (Fig. 2); hind femur with macrosetal formula 2:0 *elongata*, n. sp.
- 1'. Head not produced anterad, crown rounded; length of lateral margin of pronotum slightly more than half maximum length of eye (Fig. 11); hind femur with macrosetal formula 2:1 (Fig. 14) *obscura*, n. sp.



Figs. 1-9. *Omanagallia elongata*, n. sp., holotype ♂: 1, head, anteroventral view; 2, habitus, dorsal view; 3, hind wing apex, vf, vannal fold; 4, terminalia, lateral view (internal structures outlined with dashed lines); 5, abdominal sternum VIII, subgenital plates, and pygofer, ventral view; 6, aedeagal shaft, posteroventral view; 7, aedeagus, lateral view; 8, style, ventrolateral view; 9, styles and sclerites of connective, ventral view.



Figs. 10-15. *Omanagallia obscura*, n. sp., holotype ♀: 10, head, anteroventral view; 11, habitus, dorsal view; 12, head and thorax, lateral view, ek, episternal knob; 13, right forewing; 14, left metathoracic leg (femoral apex, tibia, and tarsus), ventrolateral aspect; 15, 2nd valvula, lateral view.

Omanagallia elongata, NEW SPECIES

(Figs. 1-9)

Type locality: Tigre, Buenos Aires, Argentina.

Description.—Crown (Fig. 2) strongly produced anterad, depressed, with pair of submedial gibbosities, rugose anteriorly, in dorsal view with lateral margins diverging slightly anterodorsad of eyes, anterior margin arcuate, slightly sinuate near margins of frontoclypeus; frontoclypeus in anteroventral view slightly produced dorsomesad of ocelli. Pronotum (Fig. 2) with pair of broad submedial depressions, rugae indistinct, lateral margin longer than maximum length of eye. Hind wing (Fig. 3) with two preapical r-m crossveins, the most basad slightly closer to marginal vein than to fork of M. Metathoracic tibia with setal formula 3:2:4:18+. Male genitalia. Valve (Fig. 5) quadrate, fused to pygofer; plates (Fig. 5) subtriangular, fused mesally at base, lateral margins in ventral view concave; pygofer (Fig. 4) with posterior lobe broad, bluntly tapered, apex oriented posterodorsad; style (Figs. 8, 9) in lateral view with shank broad, apex auriculate, with small lateral preapical tooth; connective (Fig. 9) comprising posterior transverse sclerite attached to styles and median anterior sclerite attached to aedeagus. Aedeagus (Figs. 6, 7) with atrium situated dorsally, distant from styles; shaft in lateral view elongate, slender, U-shaped, in caudal view narrow and parallel sided with a few sharp, irregularly spaced, lateral teeth; gonopore apical, gonoduct clearly visible throughout length of aedeagus. Female. Unknown. Measurements (mm). Length including forewing, 5.6; pronotum width, 0.9; head width, 1.4; head height, 1.1; crown length, 0.4; forewing length, 4.5; prothoracic tibia length, 0.7; mesothoracic tibia length, 1.0; metathoracic tibia length, 1.6; metathoracic tarsus length, 0.5.

Material examined.—Holotype ♂ labelled: "BsAs/ Tigre/ IX.957. Daguerre; ARGENTINA/1968 Coll./ J. Daguerre; HOLOTYPE/ Omanagallia/ elongata/ Dietrich" [USNM].

Notes.—*Omanagallia elongata* resembles *Evansiola* China (Evansiolinae) in the structure of the head and pronotum, but differs in other features: ocelli present; forewing venation not reticulate, veins prominent; hind wings present.

Omanagallia obscura, NEW SPECIES

(Figs. 10-14)

Type locality: Corumba, Mato Grosso, Brazil [USNM].

Description.—Crown (Fig. 11) short, not flattened, in lateral view (Fig. 12) produced dorsad of anterior margin of pronotum; frontoclypeus concave dorsomesad of ocelli. Pronotum (Figs. 11, 12) depressed anteriorly and sublaterally, rugae on anterior half strongly curved anterad medially; lateral margin slightly longer than half maximum length of eye. Mesepisternum with dorsal knob (Fig. 12, ek). Hind wing with one r-m crossvein. Metathoracic tibia (Fig. 14) with setal formula 7-8:6:4-5:20+. Male. Unknown. Other features as described for genus. Measurements (mm). Length including forewing, 4.3; pronotum width, 1.0; head width, 1.2; head height, 1.2; forewing length, 3.6; prothoracic tibia length, 0.7; mesothoracic tibia length, 0.8; metathoracic tibia length, 1.6; metathoracic tarsus length, 0.5; ovipositor length, 0.9.

Material examined.—Holotype ♀ labelled: "Corumba, Brazil/ Matto [sic] Grosso/ 14-22 Dez. [sic] 1919/ Cornell Univ. Exp.; Cornell U./ Lot 569/ Sub 127; HOLOTYPE/ Omanagallia/ obscura/ Dietrich"; 1 ♀ paratype, same data [USNM]. Additional material: 1 ♀, Zelaya, Buenos Aires, Argentina, 13-viii-1958 (J. Daguerre) [USNM].

Note.—*Omanagallia obscura* resembles other Agalliinae in size and shape but is easily distinguished by its depressed pronotum and carinate forewing veins.

DISCUSSION

The monophyly of *Omanagallia* is supported by the strongly raised veins of the forewing and the absence of vein M_{1+2} . Al-

Table 1. Morphological comparison of *Omanagallia*, other Agalliinae, and Evansiolinae (+ = present/true; - = absent/false).

Feature	<i>Omanagallia</i>	Agalliinae ¹	Evansiolinae ²
Head			
Vertex produced	+	+/-	+
Postfrontal sutures	-	+/-	-
Ocelli	+	+	-
Antennal ledges near dorsal margin of head	-	-	+
Pronotum			
Depressed	+	+/-	+
Lateral margin long	+	+/-	+
Mesepisternum			
Dorsal knob	+/-	+/-	-
Forewing			
Granulose	+	+	-
Short	-	+/-	+
Veins strongly carinate	+	-	-
Vein R ₁	-	+/-	+
Vein M ₁₊₂	-	+	+
Venation reticulate	-	+/-	+
Hind leg			
Femoral setal formula 2:0	+/-	-	+
Tarsomere I plantar setae in 2 rows	+/-	+/-	-
Male genitalia			
Valve fused to pygofer	+	+/-	-
Pygofer dorsal hooks	-	+/-	+

¹ Based on *Agalliota albidula* (Uhler), *Bergallia lateralis* Oman, *Agalita* sp., and *Euragallia furculata* Oman [USNM].

² Based on *Evansiola insularis* Evans and *E. kuscheli* (China) [USNM]. (Genitalia of *E. kuscheli* not examined.)

though the carinate venation and coarsely granulate texture of the forewing suggests an affinity to the Eupelicinae, features of the head (ocelli on face) and male genitalia (valve fused to pygofer, pygofer without oblique basolateral cleft, style slender and elongate) demonstrate that the new genus is more closely related to the Agalliinae, Evansiolinae, and Megophthalminae (see illustrations in Oman 1938, 1941, Linnavuori and DeLong 1977).

The produced head and depressed pronotum of the new genus suggest an affinity to the Evansiolinae and Megophthalminae, but each of these subfamilies has putative synapomorphies that are absent in *Omanagallia*. Species of the subfamily Mego-

phthalminae, known only from Europe, Africa, and western North America, have the postfrontal sutures carinate and the transclypeal suture complete. Species of the monobasic subfamily Evansiolinae, known only from the Juan Fernández Islands (Chile), lack ocelli and hind wings, and have antennal ledges situated near the dorsal margin of the face. Thus, despite their similarities to *Omanagallia*, the Evansiolinae and Megophthalminae apparently represent distinct lineages.

Synapomorphies uniting the Agalliinae (sensu Davis 1975) as a lineage distinct from Evansiolinae have not been found, and the latter subfamily may have been derived from the former (Linnavuori and DeLong 1977).

Nevertheless, placement of *Omanagallia* in Agalliinae rather than Evansiolinae or Megophthalminae is supported by the presence of a dorsal knob on the mesepisternum of *Omanagallia obscura* (Fig. 12, ek), a putative synapomorphy found in *Brasa rugicollis* (Dozier) (fig. 65 of Kramer 1964) and many other Agalliinae, but lacking in Evansiolinae and Megophthalminae. Additional similarities of *Omanagallia* to other agalliines (Table 1) may be symplesiomorphic. Phylogenetic analyses of the Agalliinae and related subfamilies may eventually clarify the polarities of these characters.

The geographic disjunction between *Omanagallia* (southern Brazil, northern Argentina) and other Agalliinae having produced heads (*Agalita* Evans and *Stenagallia* Evans—Juan Fernández Islands) suggests that similarities between *Omanagallia* and the insular genera represent convergence rather than synapomorphy. This hypothesis is supported by the reduced size and reticulate venation of the forewing of the insular genera, putative synapomorphies not present in *Omanagallia*.

Placement of the two species of *Omanagallia* in separate genera might be justified based on the substantial differences in the shape of the head and the chaetotaxy of the hind legs. However, until additional species are discovered subdivision of the genus seems unwarranted.

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